

The Impact Of Societal Factors On Suicide Rates In India

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Abstract:

The study investigates the correlation between societal factors and suicide rates in India, emphasizing disparities across genders and age groups. The escalating suicide rates, especially among young adults and women, underscore the significant influence of economic stress, social isolation, and cultural pressures on individuals' mental health and propensity for suicide. The study utilizes the "Suicide Cases in India" dataset from Kaggle, spanning 2001-2012. Analyzing demographic information across different states, including 237,519 entries on state location, year recorded, gender identification, age group classification, and reasons for suicide; through descriptive statistics, trend analysis, and Chi-Square Tests: the research aims to uncover patterns, trends, and connections that can inform policy interventions. The study's results reveal significant regional disparities, with Madhya Pradesh having the highest number of cases. 'Causes' is identified as the main reason behind suicides, indicating a strong societal impact. Fluctuating suicide rates over time suggest multifactorial societal changes at play. While no significant association is found between gender and Type_code societal factors through Chi-Square Tests, age groups show a strong connection emphasizing the need for age-demographic considerations in suicide prevention strategies. The conclusion highlights significant variations in suicide rates across regions and demographics in India, emphasizing the impact of societal factors. Gender-inclusive interventions are essential as gender does not significantly affect suicides related to these factors. Tailored strategies are required to address the unique challenges faced by different age groups and regions.

Key Word: suicide rates; societal factors; Age-demographic intervention; india

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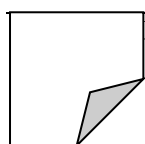
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I. Introduction

This study conducts a critical analysis of how different societal factors impact suicide rates and puts emphasis on the disparities observed across genders and age cohorts in India. India, which significantly contributes to global suicide statistics, has alarming rise in suicide rates that highlight the complex interplay of societal factors requiring a deeper investigation (Arif, 2022; Patel, 2023). This research aims to uncover the correlation between societal influences — such as economic stress, social isolation, and cultural pressures — and their impact on suicide rates among different demographics in India. The escalating suicide rates, especially among young adults and women, accentuate the critical public health concern. This suggests that individuals' mental health and propensity for suicide are significantly affected by economic, social, and cultural contexts (Arif, 2022; Patel, 2023). The study originated from the pressing need to comprehend the societal underpinnings that contribute to high suicide rates in India. To enhance comprehension of these factors, the development of focused interventions and preventative measures is imperative. This investigation contributes to suicide prevention's scholarly discourse while also offering perspectives that can guide policymakers and psychological healthcare professionals towards effective tactics customized for India's distinct socio-cultural milieu. This study offers comprehensive insights into the societal dynamics affecting suicide rates in India, ultimately contributing to the formulation of interventions that could mitigate this pressing public health concern.

II. Literature Review

Numerous empirical studies and theoretical frameworks have shed light on the many complex aspects associated with suicidal behavior within India's societal landscape. A decadal analysis of suicide data from the National Crime Records Bureau was conducted by Arif (2022), covering the years 2011 to 2020. The study revealed a noteworthy prevalence of suicide among individuals aged between 15 and 29 due mainly to family issues. This critical intersection between societal pressures and vulnerable age demographics highlights the susceptibility of this age group. In his study, Patel (2023) uses a phenomenological content analysis to examine the causes of suicide. He identifies rapid societal changes and anomic conditions as significant contributors. This



study emphasizes that isolation, loneliness, and societal anomie play a role in fostering environments conducive to suicide. It offers a sociological lens to understand the phenomena.

Vuyyuru, Kasa, and Varghese (2023) present a retrospective observational study based on National Crime Records Bureau data: their findings indicate an alarming increase in suicide rates from 2012 to 2021. Additionally, the study highlights that hanging is the most common method employed; this information underscores the gravity of the situation. In another related research effort by Das, Khar, Karia, and Shah (2022), specific attention is given to health care professionals. Their investigation reveals significant contributing factors such as academic stress, mental illness; these elements are identified as predominant causes leading to suicides among medical students and professionals alike. Both studies provide valuable insights into different aspects of rising suicide rates within distinct populations—highlighting persistent challenges despite previous interventions—and emphasize the urgent necessity for more targeted measures moving forward. Healthcare professionals' specific vulnerabilities to suicide, exacerbated by occupational stressors, are brought to light by this study.

Minkov et al. (2022) analyzed over 50,000 respondents across 53 countries and revealed that higher suicide rates significantly correlate with a "harsh" culture marked by less socialization for helping, sharing, and forgiving. This study emphasizes national culture as a critical risk factor for suicide by suggesting that societal harshness and individual traits such as low self-esteem and poor mood contribute significantly to variations in national suicide rates. Wu et al. (2022) conduct a cross-sectional ecological investigation spanning 171 countries to investigate the correlation between criminalization of suicide and its impact on national suicide rates. Their findings highlight that having laws that penalize suicide are tied to slightly increased national suicide rates, particularly for women. This brings attention to the possible negative impacts of laws against suicide, especially in countries with lower Human Development Indexes and where most people aren't Muslim.

Lester and Krysińska (2022) presented epidemiological data on suicide rates by nation, sex, and age. They discussed national differences in suicide rates with a focus on societal composition and integration. Sun (2022) dedicates their research to analyzing global suicide trends and predictions, finding significant sex, age, and generational impacts on suicide rates. This study underscores that mental health issues have a critical impact on suicide, particularly in older populations. It implies that there are factors more significant than a country's GDP or GDP per capita in determining suicide rates.

According to Moore's (2022) research, social capital is a significant predictor of suicide rates in high-income countries but does not have a notable association with suicide rates in middle- or low-income nations. This suggests differing mechanisms of social support and its effects on suicide prevention between economic strata. The study conducted by Rajkumar (2023) investigated how national-level social and economic indices relate to suicide rates. The results showed significant correlations with subjective well being, sustainable development, and economic inequality among other factors. Additionally, Akyuz and Karul's (2022) research delved into the intricate connection between socioeconomic elements and suicide rates on a broader scale. They examined the impact of economic factors on suicide mortality in Turkey, demonstrating that industrial production and investment negatively affect suicide mortality, whereas inflation has a positive effect. This study underscores how economic dynamics influence mental health and suicide rates in a developing country context.

By considering various genders and age groups, these studies offer a comprehensive insight into the societal factors that impact suicide rates in India. The research highlights the complex nature of suicide as a social problem, emphasizing on interventions required to tackle economic, cultural and personal elements holistically.

III. Methodology

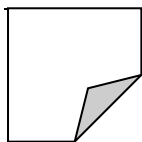
Study Design: Using a descriptive and analytical design, this study investigates the correlation between suicide rates in India across diverse genders and age groups with societal factors. Its objective is to recognize patterns, trends, and relationships within the dataset for policymaking purposes regarding intervention strategies.

Population: The population for this study encompasses all recorded suicide cases in India from the dataset spanning the years 2001 to 2012. This includes diverse demographics, spanning different ages, genders, educational backgrounds, and socio-economic statuses, across various states and union territories.

Sampling and Sample Technique: Due to the inclusive nature of the dataset, which encompasses 237,519 entries from various states and demographic groups, this study does not use a traditional sampling method. Instead, it employs the entire dataset as a representative sample of India's larger population of suicide cases during the specified time period.

Data Source: The dataset titled "Suicide Cases in India," which is available on Kaggle, serves as the primary data source for this study. It is a secondary dataset that has been compiled and made publicly available on Kaggle detailing various aspects of suicide cases such as state, year, gender, age group, and causes.

Data Collection: Data collection involves acquiring a dataset from a credible repository or database, where it has been made available for research purposes. The dataset is pre-compiled and does not require direct data gathering from participants, ensuring ethical considerations are upheld.



Data Analysis: Data analysis comprises several steps tailored to the study's objectives using Python language:

- Descriptive Statistics summarizes the dataset, including the distribution of cases by state, gender, and age group.
- Trend Analysis identifies patterns over time in suicide rates.
- Correlation Analysis using Chi-Square Test explores associations between societal factors and suicide rates segmented by gender and age groups to inform targeted interventions.

This methodological framework is designed to look into the factors affecting suicide rates in India. It provides insights for informed policymaking and targeted prevention strategies, giving policymakers a solid foundation for decision-making and specific interventions.

IV. Result

Descriptive Statistics

The descriptive statistics provide significant insights as presented in Table no 1. With data from 38 distinct states, Madhya Pradesh has the highest number of reported cases, bringing regional disparities to light. The fact that 'Causes' is the most prevalent Type_code with over 109,200 entries emphasizes how societal factors impact suicide rates. Additionally, there are numerous unique entries under Type (69), including "Others (Please Specify)", indicating diverse reasons behind suicides and a call for tailored interventions on a broad scale. Moreover, the prevalence of male suicides and individuals aged between 15-29 being predominantly affected highlights demographic vulnerabilities.

Table no 1: Descriptive Statistics

| Feature | Description | Statistic |
|-----------|-------------|---|
| State | Count | 237,519 |
| | Unique | 38 |
| | Most Common | MADHYA PRADESH (6,792 times) |
| Type_code | Count | 237,519 |
| | Unique | 5 |
| | Most Common | Causes (109,200 entries) |
| Type | Count | 237,519 |
| | Unique | 69 |
| | Most Common | Others (Please Specify) (7,263 entries) |
| Gender | Count | 237,519 |
| | Unique | 2 |
| | Most Common | Male (118,879 entries) |
| Age_group | Count | 237,519 |
| | Unique | 6 |
| | Most Common | 15-29 (45,223 entries) |

Source: Author's computation (2024)

Trend Analysis

The trend analysis of the years 2001 through 2012 reveals fluctuating suicide rates without a clear linear trend. It is noteworthy to observe that the number of suicide cases varies annually, indicating periods with rises and falls in numbers. This variability implies an influence by complex and multifactorial societal changes affecting suicidal tendencies throughout those studied years.

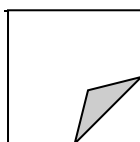
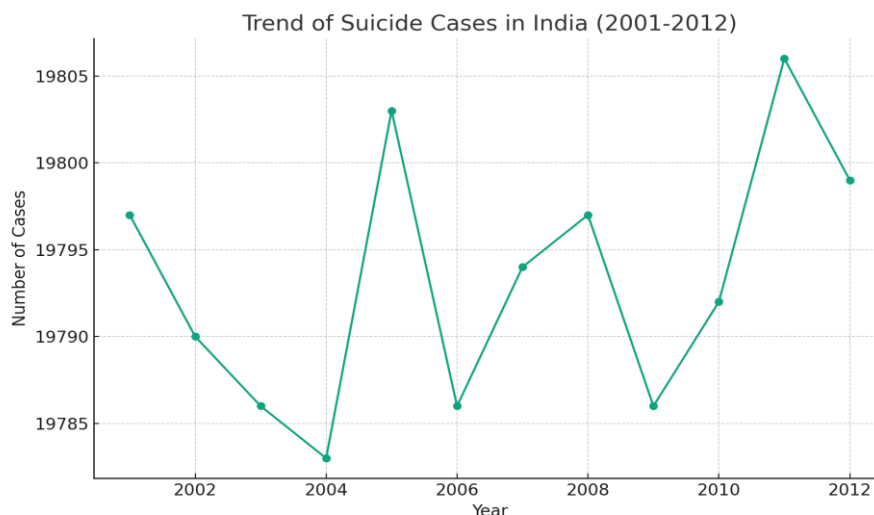


Figure no 1: Trend of suicide cases in India (2001-2012)



Source: Author’s computation (2024)

Chi-Square Test

Type_code vs Gender: With a Chi-square statistic of approximately 0.919 and a p-value of 0.922, there's no significant association between Type_code categories and Gender. This suggests that the distribution of suicide cases across different societal factors (as represented by Type_code) does not significantly vary by gender.

Type_code vs Age_group: The Chi-square statistic is substantially large (237521.221) with a p-value of 0.000, indicating a highly significant association between Type_code categories and Age_group. This suggests that the distribution of suicide cases across different societal factors varies significantly among different age groups, pointing to age-specific influences of societal factors on suicide rates.

The test involving Age_group reveals critical insights, suggesting that societal factors' impact on suicide rates might be highly age-dependent. This result underscores the importance of considering age demographics in suicide prevention strategies and further investigating how specific societal factors influence different age groups.

Table no 2: Chi Square Test Result

| Test | Chi2 Statistic | p-value | Degrees of Freedom |
|------------------------|----------------|---------|--------------------|
| Type_code vs Gender | 0.919 | 0.922 | 4 |
| Type_code vs Age_group | 237521.221 | 0 | 20 |

Source: Author’s computation (2024)

V. Discussion Of Findings

The study's results indicate considerable variations in suicide rates throughout India, and Madhya Pradesh stands out as a noteworthy area of concern. This observation aligns with Patel et al. (2023), who highlight the need for region-specific suicide prevention strategies to address the geographic variability in suicide incidence. The crucial influence of societal factors on suicide rates was underscored by Das et al. (2022) in their research. This finding aligns with the identification of 'Causes' as a predominant Type_code in over 100,000 cases within this study. This finding echoes their earlier research and highlights the significant impact of societal factors on suicide rates.

Furthermore, the analysis reveals a stark demographic vulnerability, particularly among males and the 15-29 age group. This demographic pattern is consistent with findings by Arif (2022), who also reported a higher prevalence of suicide among young adults, suggesting a universal trend of youth susceptibility to societal pressures. However, the lack of significant gender differences in the distribution of suicide cases across societal factors diverges from Vuyyuru et al. 's (2023) findings, which suggested gender-specific societal influences on suicide rates.

Furthermore, the significant association between Type_code categories and Age_group reveals age-specific societal impacts on suicide rates. This provides a novel insight that contrasts with Samson et al. 's (2022) findings of no clear age-related patterns in the influence of societal factors on suicide. Society's influence on suicide complexity highlights the need for age-tailored interventions.

In summary, this study confirms the influential role of societal factors on suicide rates. It also reveals new dimensions of vulnerability based on demographics and regional disparities. It is important to adopt a thorough strategy for preventing suicide, taking into account unique contexts related to geography, demographics and age groups as highlighted by these findings. This aligns with global research trends while addressing unique challenges in India.

VI. Conclusion

The research demonstrates notable discrepancies between different regions of India and age groups in terms of suicide rates, highlighting the critical effect that social factors have on this issue. Since gender does not seem to play a significant role in suicides related to societal factors, it is crucial that interventions be applicable across all genders but address challenges specific to particular ages or regional contexts. Effective approaches should involve conducting detailed studies at the local level so as to grasp region-specific stressors while also providing nationwide education and mental health support aimed toward those with heightened risk factors like young people. Prevention initiatives designed for each respective age group along with fostering community-based support systems would alleviate these pressures significantly thereby lessening instances of suicide considerably.

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